

UNCLASSIFIED

RECORD VERSION

STATEMENT BY
COLONEL MARK BAGG
CHIEF OF THE DEPARTMENT OF ORTHOPAEDICS AND REHABILITATION
BROOKE ARMY MEDICAL CENTER
FORT SAM HOUSTON, TEXAS.

HOUSE VETERANS AFFAIRS COMMITTEE
UNITED STATES HOUSE OF REPRESENTATIVES

FIRST SESSION, 110TH CONGRESS

CENTER FOR THE INTREPID

15 MARCH 2007

NOT FOR PUBLICATION
UNTIL RELEASED BY THE
COMMITTEE ON VETERANS AFFAIRS

UNCLASSIFIED

“The Center for the Intrepid was donated by over 600,000 Americans. Their generosity expresses the profound appreciation America has for its gallant servicemen and women who defend freedom. This Center is dedicated to our severely wounded military heroes whose selfless sacrifices for our Nation entitle them to the best rehabilitative care.”

Mr. Chairman, Mr. Miller, and distinguished members of the subcommittee, I am Colonel Mark Bagg, the chief of the Department of Orthopaedics and Rehabilitation at Brooke Army Medical Center (BAMC) at Fort Sam Houston, Texas. In my role at BAMC, I am also responsible for the day-to-day operations of the new Center for the Intrepid (CFI), arguably the most advanced outpatient rehabilitation facility in the United States today.

Thank you for inviting me to testify before you today to explain the services available at the CFI and our vision for providing outpatient rehabilitative care for our combat casualties and America's Veterans. Over the past four years, with Congress' strong support, we have revolutionized amputee care for more than 560 military amputees. The CFI allows us to continue that revolutionary change and extend our lessons learned to America's veterans who suffer from non-limb loss injuries and severe burn injuries.

BACKGROUND

In the spring of 2005, the board of directors of the Intrepid Fallen Heroes Fund, a private, not-for-profit charitable foundation, made it known they were interested in building a physical rehabilitation center for the wounded warriors returning from

Operation Iraqi Freedom and Operation Enduring Freedom. A formal proffer for the facility was accepted by the Secretary of the Army on 30 June 2005. The facility was named the “Center for the Intrepid” (CFI) and during an extensive fund raising campaign, funds to build and partially equip the facility were donated by over 600,000 Americans.

Ground was broken for a four story, 65,000 square foot patient rehabilitation facility as well as two new Fisher Houses on 22 September 2005. These homes, funded by the Fisher Foundation, were built on the new footprint and each provides 21 handicap accessible suites. The addition of the two new homes brought the total number of homes at BAMC to four, and the total number of rooms available to 57. The CFI and Fisher House complex is located on a 4.5 acre site adjacent to BAMC.

These generous gifts were formally accepted and dedicated during a ribbon cutting ceremony which took place 29 January 2007. Staff quickly relocated operations from their previous locations embedded within BAMC and patients began to receive their care in the facility on 15 February 2007.

MISSION

The mission of the CFI is to provide the highest quality of comprehensive outpatient rehabilitation for eligible patients in a state- of- the-world facility. Utilizing a multidisciplinary approach, service members who sustain severe traumatic injuries with resultant amputation or loss of limb function, to include burn injury and limb salvage procedures, will be afforded an opportunity to maximize their functional improvement and perform at the highest level possible whether they remain in the military or choose to reenter civilian life. The staff at the CFI carries out this patient care mission while

conducting leading edge research in the fields of Orthopaedics, prosthetics and physical/occupational rehabilitation, providing Department of Defense and Department of Veterans Affairs professionals' opportunities for continuing education on rehabilitation modalities, and offering training programs and graduate medical education for the full spectrum of rehabilitation professionals.

PROGRAMS

Amputee Patient Care Program. The Amputee Patient Care Program at the CFI offers a full spectrum of amputee care ranging from initial out-patient care through final prosthetic adjustment. Patients are encouraged to progress from basic activities of daily living (ADL) through advanced level sport and leisure activities with the goal of maximizing potential either in the military or in civilian life.

Limb Reconstruction/Limb Salvage Program. The goal of the limb reconstruction/limb salvage program is to assist those service members who have resultant functional limb loss after undergoing procedures to save them. This category of patient will benefit from the advanced therapy and functional activities.

Advanced Burn Rehabilitation. The CFI offers additional advanced rehabilitative and functional training for service members sustaining burn injury. After completing a normal course of therapy following burn injury, service members may be referred to the CFI for advanced conditioning and functional activities not available at other locations.

SERVICES PROVIDED

Capitalizing on this generation's use of technology and virtual reality, the facilities at the CFI are state-of-the-world. Patients are challenged by state-of-the-art physical therapy and occupational therapy, rigorous sports equipment, and virtual reality

systems. They will benefit from individualized case management, access to behavioral medicine services, and in-house prosthetic fabrication. Out-patient services at the CFI include Behavioral Medicine, Case Management, Physical Therapy, Occupational Therapy, Physical Medicine and Orthopaedics, Prosthetics, and Community Reintegration programming. Advanced therapeutic activities available, as appropriate for specific patients, include a motion analysis lab, Computer Assisted Rehab Environment/Virtual Reality system, Firearms Training Simulator, Vehicle Simulator, Climbing Wall, Pool, Flowrider®, indoor track, and outdoor sport court.

MEDICAL DIRECTION

The medical care provided in the CFI is under the direction of the chairman of the Department of Orthopaedics and Rehabilitation at BAMC. Physiatrists work closely with Orthopaedic Surgeons, Burn Surgeons, and other physicians to coordinate all care.

BEHAVIORAL MEDICINE

The ultimate goal for the CFI Behavioral Medicine Service is to enable patients to maximize their potential for emotional, mental, spiritual, and physical recovery. Behavioral Medicine provides comprehensive psychiatric support services to amputees and their families. This is accomplished using individual therapy, support group meetings, medication management, family support groups, and cognitive assessment. The behavioral medicine staff is available for the facilitation of all behavioral health needs.

CASE MANAGEMENT

A full-time case manager is assigned to each patient in the CFI. These professionals work closely with the patients, their families, and the entire staff of the Center for the Intrepid

to coordinate the development of a customized, multidisciplinary team plan of care and to monitor the plan of care and report any problems. They also seek solutions to improve the delivery of care and patient outcomes, identify and assist with all needs of the patient and the family, and function as the initial point of contact for multiple referrals utilized to augment care at BAMC. Case managers also guide wounded warriors through the medical evaluation board (MEB) process and help ensure timely completion of MEBs.

MILITARY PERFORMANCE LAB

The Military Performance Lab (MPL) seeks to analyze human motion, with particular emphasis on amputee gait (walking). The information collected in the MPL is ultimately used to help physicians, physical therapists, and prosthetists adjust their treatment plans and improve patient function. The MPL is comprised of two functional areas, the Gait and Motion Analysis lab and the Computer Assisted Rehabilitation Environment or CAREN.

Physical Therapists and biomedical engineers in the Gait and Motion Analysis Lab use 26 infrared cameras to track the position of reflective markers placed on a patient's body. Joint angles are calculated from the motion analysis. Ground reaction forces in multiple directions are measured by force plates in the floor, parallel bars, and treadmill. These forces, when combined with the calculated joint angles, allow the analysis of the torque that muscles or prosthetic components are producing. Electromyography (EMG) is used to assess the electrical activity that is given off during muscular contraction and can detect both the timing and intensity of muscular contractions. All of this information is used to assess patient progress. It also serves to validate new treatment protocols and prosthetic components.

The CAREN is a 3-D rehabilitation simulator and is the first of its kind in the world. The CAREN consists of a 21 foot dome with a 300 degree screen upon which a variety of “virtual realities” may be displayed. A movable platform in the center of the dome has a treadmill and force plates identical to those in the gait lab. The visual display and motion capture systems in the CAREN allow the patient to be immersed into the virtual reality scene. The capabilities of the CAREN will be central to the research mission of the center as investigators study vestibular disturbances, and balance dysfunction, and responses to varying levels of stress in patients with Post Traumatic Stress Disorder.

OCCUPATIONAL THERAPY

Occupational Therapy focuses on restoring health and function following injury or illness. Treatment activities are designed so that patients can successfully perform occupational tasks and ADLs like bathing, dressing, shopping, cooking, writing, performing household chores and everything needed to function on a day-to-day basis. Therapists and technicians provide evaluation and treatment for conditions including amputation, fracture, nerve injury, and soft tissue injury. Utilizing activities to regain range of motion, increase muscle strength, and decrease pain, Occupational Therapists help patients perform functional tasks to reach their maximum potential and independence.

One of the ways the Occupational Therapy staff encourages independence is through the use of the ADL Apartment. In this space, the patients are faced with a real-world living environment where therapists evaluate their physical and/or mental ability to safely perform specific tasks. The apartment has a computer workstation equipped with

state of the art voice recognition software, compact keyboards, a height adjustable desk top, a fully equipped kitchen and bathroom, and a comfortable living room.

In addition to the traditional occupational therapy modalities available in most occupational therapy clinics, two simulation systems are available to patients at the CFI. The first is the Firearms Training Simulator. This state-of-the-art system allows Soldiers to simulate firing different weapons in a host of virtual settings. Using Bluetooth technology weapons, patients practice different firing techniques and may experience everything from basic marksmanship scenarios through very complex scenes requiring identification of friend or foe. For those service members who desire to remain on active duty, this realistic training allows them to re-qualify with the weapon systems common to all branches of the military. The second simulation system is the driving simulator. Although actual driver's testing of amputees is performed by the VA, this simulator allows patients the opportunity to develop new driving skills and to practice prior to formal testing.

The Occupational Therapy staff also coordinates a community re-integration program for the patients. This program includes a wide variety of experiences outside the clinic setting. Activities such as horseback riding, paint-ball, archery, kayaking, and golf allow the patients to be challenged and have fun at the same time.

PHYSICAL THERAPY

Physical Therapists provide evaluation, diagnosis, treatment, and rehabilitation for patients who have sustained trauma and/or illness. For the amputee and burn patient, the Physical Therapy team utilizes multiple interventions focusing on patients' abilities and interests, not their disabilities. In order to accomplish "total rehabilitation,"

the Physical Therapy team provides the full spectrum of physical therapy modalities including amputation awareness, residual limb care, wheelchair mobility and crutch training. They also perform strengthening activities, pre-prosthetic training, balance, proprioception, endurance activities, and gait training on a variety of surfaces.

The Physical Therapy staff also coordinates an adaptive sports program including a multi-phased running program, track and field, volleyball, swimming, scuba diving, kayaking, and basketball. Through the volunteer support of a variety of charitable organizations, patients in the advanced stages of rehabilitation are offered the opportunity to learn and enjoy snow skiing, water skiing, fencing, archery, shooting, and golf.

The Physical Therapy staff utilizes several pieces of specialized equipment. On the third floor of the CFI, there is a tread-wall and a 21 foot climbing tower with auto-belay to promote strengthening, agility, and aerobic conditioning. In the natatorium there is a six lane pool for pre-running activities, kayaking, water basketball, volleyball, and general swimming. Adjacent to the pool is an indoor surfing activity called the Flowrider®. This unique indoor wave machine is used to improve balance, coordination, strength, motivation, and confidence.

PROSTHETICS

The Prosthetists and technicians at the CFI utilize a team approach to provide state-of-the-art on-site fabrication of artificial limbs. Standard production methods are augmented by computer assisted technology for design, milling, and production of prosthetic devices wireless technology for remote adjustment of upper and lower extremity prostheses, design

and fabrication of unique specialty limbs for sports and other activities, high-tech materials in combinations of acrylic resins, carbon fiber composites and titanium.

STAFFING

The staffing for the center was selected to provide building provides the full spectrum of amputee rehabilitation as well as the advanced outpatient rehabilitation for patients suffering residual functional loss from burn injury or limb salvage procedures. The CFI is an outpatient facility under the command and control of BAMC and specifically the Department of Orthopaedics and Rehabilitation. The CFI is staffed by 49 personnel including active duty Army medical staff, Department of the Army civilians, contract providers, and nine full time Department of Veterans Affairs employees. A recently signed MOA between the Department of Veterans Affairs and Department of the Army integrated seven full time Veterans Health Administration employees and two full time Veterans Benefits Administration employees into the staff of the CFI. Together these professionals work to maximize the patients' rehabilitative potential and to facilitate reintegration whether that is back to active duty or civilian life.

SCOPE OF CARE

The first priority of care at the CFI is for combat casualties who sustain actual or functional limb loss as a result of traumatic amputation, limb salvage procedures, or burn injury. As capacity permits and as the circumstances of hostilities change, referral procedures for veteran outpatients from Department of Veterans Affairs medical centers across the country will be implemented. In concept at the current time, these referral guidelines will provide benefits to veterans who have sustained amputation and have not yet maximized their potential for rehabilitation.

The CFI represents a tremendous advance in the quality of facilities available for military and Department of Veterans Affairs patients and providers. Much of the cutting edge technology available at the CFI is integrated into the transitional Military Amputee Training Center currently being built at Walter Reed Army Medical Center.

In closing, let me again express my appreciation to the Congress, the Intrepid Fallen Heroes Fund, and the more than 600,000 American citizens who made the Center for the Intrepid possible. The Congress' strong support of military and veterans' health care allows us to continue a world-class amputee care program at Walter Reed Army Medical Center and BAMC. The generosity of the Intrepid Fallen Heroes fund allows us to continue to build on our successes in an incredible physical setting. If you have not yet had a chance to visit the CFI and BAMC I encourage and invite you to do so.

Mr. Chairman, thank you for inviting me here today. I look forward to your questions.